



ABSTRACT OF THE DISCLOSURE

A SAT estimating portion supplies a grip degree estimating portion with the estimated SAT value. A summing device sums a front wheel slip angle on which high 5 pass filter processing has been performed and a front wheel slip angle on which low pass filter processing has been performed so as to obtain an integrated slip angle. A grip degree estimating portion estimates a grip degree of a tire, by calculating a SAT reference value which is based on the integrated slip angle, and calculating a ratio between the SAT reference value and the estimated SAT value. A road surface μ 10 value estimating portion estimates a road surface μ value when the grip degree becomes equal to or lower than a reference value.